

1 IN THE CLAIMS:

2 Claims 1-34 are cancelled herewith.

3 New claims 35-54 are submitted as follows:

4
5 **1-34. (Cancelled).**

6
7 **35. (New)** A processor-readable storage medium comprising
8 processor-executable instructions configured for:

9 identifying a plurality of instructions executing on a processor over an
10 interval of time, wherein the plurality of instructions corresponds to one or more
11 applications executing on the processor;

12 identifying one or more thread and process states corresponding to the
13 identified instructions;

14 receiving a plurality of instantaneous power consumption values over the
15 interval of time from a power measurement circuit; and

16 correlating ones of the instantaneous power consumption values with
17 corresponding ones of the identified instructions and corresponding ones of the
18 identified thread and process states so as to derive a power profile for the interval
19 of time.
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1 **36. (New)** A processor-readable storage medium as recited in
2 claim 35, wherein the identifying comprises:

3 interrupting the processor;
4 sampling a program counter of the processor;
5 scanning a lookup table to find an address indicated by the program
6 counter; and
7 determining an instruction located at the address.

8
9 **37. (New)** A processor-readable storage medium as recited in
10 claim 35, wherein the receiving comprises:

11 querying the power measurement circuit; and
12 receiving digital power readings from the power measurement circuit based
13 on the querying.

14
15 **38. (New)** A processor-readable storage medium as recited in
16 claim 35, wherein the receiving comprises receiving digital power readings from
17 the power measurement circuit at preset time intervals.

18
19 **39. (New)** A processor-readable storage medium as recited in
20 claim 35, wherein the instantaneous power consumption values correspond to
21 respective measured amounts of electrical power consumed during execution of
22 the corresponding identified instruction on the processor.
23
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1 **40. (New)** A processor-readable storage medium as recited in
2 claim 35, wherein the power profile is configured to be output to a user in a format
3 selected from the group comprising:

4 a table; and

5 a graph.

6
7 **41. (New)** A processor-readable storage medium as recited in
8 claim 35, and further comprising processor-executable instructions configured for:

9 outputting the power profile to a user in the form of a graphical display
10 including:

11 at least some of the instantaneous power consumption values plotted
12 with respect to time; and

13 at least some of the identified instructions plotted with respect to
14 time.

15
16 **42. (New)** A processor-readable storage medium as recited in
17 claim 41, wherein the plotted identified instructions are formatted so as to visibly
18 distinguish the identified thread and process states corresponding thereto.

19
20 **43. (New)** A processor-readable storage medium as recited in
21 claim 35, wherein at least one identified thread and process state is characterized
22 by one or more of:

23 thread running, thread blocked, thread sleeping, thread migrate, process run
24 and process no run.
25

1 **44. (New)** A processor-readable storage medium as recited in
2 claim 35, wherein the processor is a component of a device selected from the
3 group comprising:

4 an embedded mobile PDA (personal digital assistant) computing device
5 operable by battery power;

6 a cell phone;

7 a smart phone;

8 a notebook computer;

9 a desktop PC (personal computer);

10 a workstation;

11 a server;

12 a mainframe computer; and

13 an Internet appliance.

14
15 **45. (New)** A computer comprising a power profiler configured to:
16 identify thread and process states corresponding to software instructions
17 executing on a processor;

18 receive instantaneous power consumption data corresponding to the
19 execution of the software instructions; and

20 correlate the instantaneous power consumption data with the software
21 instructions and the thread and process states such that the software instructions
22 and their corresponding identified thread and process states are associated with
23 instantaneous power consumption values indicating amounts of electrical power
24 consumed over time during the executing of the software instructions.
25

1 **46. (New)** A computer as recited in claim 45, further comprising
2 a lookup table, the power profiler further configured to monitor a program counter
3 on the processor and to identify the software instructions through the lookup table
4 based on the program counter.

5
6 **47. (New)** A computer as recited in claim 45, further comprising
7 a power profile having a plurality of power consumption values associated with
8 corresponding software instructions and corresponding thread and process states
9 so as to indicate amounts of power consumed during the execution of the software
10 instructions.

11
12 **48. (New)** A computer as recited in claim 47, wherein the power
13 profiler is further configured to output the power profile to a user.

14
15 **49. (New)** A computer as recited in claim 48, wherein the power
16 profiler is further configured such that the power profile is output to the user by
17 generating a graphical user interface.

1 **50. (New)** A system comprising:

2 a power profiler configured to correlate, over time, a plurality of software
3 instructions with corresponding instantaneous power consumption levels during
4 execution of the plurality of software instructions;

5 a lookup table having information for identifying ones of the software
6 instructions; and

7 a power profile being generated by the power profiler and associating
8 instantaneous power consumption levels with the identified software instructions
9 and one or more thread and process states corresponding to the identified software
10 instructions.

11
12 **51. (New)** A system as recited in claim 50, further comprising:

13 a power measurement circuit configured to measure the amount of power
14 consumed during execution of the identified software instructions; and

15 an analog to digital converter configured as part of the power measurement
16 circuit to convert analog power consumption measurements into digital power
17 consumption data.

18
19 **52. (New)** A system as recited in claim 50, wherein the power
20 measurement circuit is a component of a target computing device on which the
21 identified software instruction is executed.

22
23 **53. (New)** A system as recited in claim 50, wherein the power
24 profiler is further configured to output the power profile to a user by generating a
25 graphical user interface.

1 **54. (New)** A system as recited in claim 53, wherein the power
2 profiler is further configured such that the graphical user interface includes:

3 at least some of the instantaneous power consumption values plotted
4 graphically with respect to time; and

5 at least some of the identified instructions plotted graphically with respect
6 to time, the plotted identified instructions formatted so as to visibly distinguish the
7 identified thread and process states corresponding thereto.